

Appl. No. 10/630,746  
Response dated: December 27, 2005  
Reply to OA of: July 26, 2005

The multilayer RF module of the present invention includes a first to a third ceramic layers, wherein each of the first and the third ceramic layers has a circuit component thereon and the second ceramic layer is located between the first and the third ceramic layers and is provided with at least one or more air cavities. The air cavities are vertically aligned with the circuit components of the first and the third ceramic layers. Further, the device of the present invention is the multilayer RF module operating at high frequencies above a few hundred megahertz.

Applicants wish to direct the Examiner's attention to MPEP § 2131 which states that to anticipate a claim, the reference must teach every element of the claim.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed.Cir. 1990).

Clearly, due to the different effects sought by the devices and the claim limitations present in the claims directed to a multilayer RF module, a claim limitation, the claims are not anticipated. Accordingly, it is most respectfully requested that the anticipation rejection be withdrawn.

As would be appreciated by one of ordinary skill in the art, and in contrast to the presently claimed invention, Johnson et al. disclose a thermoelectric device. The thermoelectric device serves to generate electricity if junctions of the p and n type screened lines 5 and 6 alternately positioned at two opposite ends of the device are held at different temperatures. Conversely, electrical current can induce a temperature difference between the junctions. Accordingly, the junctions at two opposite ends of the device need to be thermally isolated from each other. The performance of the

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thermoelectric device is deteriorated if there is significant heat conduction between the oppositely positioned junctions (column 13, lines 14-16). To prevent or reduce the heat conduction between the junctions, there are provided with the vias 239 between oppositely disposed junctions (column 13, line 40-50).

In Johnson, the vias 239, the screened lines 5 and 6, and the junctions are all positioned on the same ceramic layer (column 13, line 44-45).

Further, the thermoelectric device of Johnson reference can not be operated in a high frequency regime since the temperature of an object cannot vary fast

In sum, Johnson fails to disclose or even suggest the multilayer RF module as recited in claim 1, in which:

1) the air cavities reduce the dielectric constant of the ceramic layers (whereas in Johnson, the vias 239 reduce heat conduction between oppositely disposed junctions);

2) the air cavities and the circuit components are vertically aligned in the different layers, respectively (whereas in Johnson, the vias 239, the screened lines 5 and 6, and junctions are formed on the same layer); and

3) the multilayer RF module operates at high frequency (whereas the thermoelectric device disclosed in Johnson does not relate to high frequency).

Further, though there is a superficial resemblance between the devices of the present invention and Johnson, in that the vias are located between the circuit elements (for example, metal lines of the present invention as defined in claim 4 and screened lines 5 and 6 in Johnson), the two devices are completely different in that:

i) the air cavities of the present invention vertically aligned to the circuit components (metal lines for example), serve to reduce dielectric losses therebetween;

ii) whereas Johnson's vias located between the screened lines 5 and 6 are functionally nothing to do with those lines 5 and 6 and only serve to improve thermal isolation between the junctions formed by the lines 5 and 6.

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Moreover, there is no teaching or motivation in the prior art which would lead one of ordinary skill in the art to make the necessary modifications to arrive at the presently claimed invention. Applicants specification may not be used as a teaching reference.

In addition, Applicants wish to direct the Examiner's attention to the basic requirements of a prima facie case of obviousness as set forth in the MPEP § 2143. This section states that to establish a prima facie case of obviousness, three basic criteria first must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaack, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Section 2143.03 states that all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Applicants also most respectfully direct the Examiner's attention to MPEP § 2144.08 (page 2100-114) wherein it is stated that Office personnel should consider all rebuttal argument and evidence presented by applicant and the citation of In re Soni for error in not considering evidence presented in the specification.

The suggestion in the reference that it would have been obvious to one of ordinary skill in the art to have sized the pores of Johnson et al. to provide the desired heat insulation and remain open during lamination of the green sheets because of the teachings of Johnson to form the openings before lamination is specifically traversed


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and does not provide the motivation to render obvious the subject matter or claim 3.  
Accordingly, it is most respectfully requested that this rejection be withdrawn.

In view of the above comments, favorable reconsideration and allowance of all  
of the claims now present in the application are most respectfully requested.

Respectfully submitted,

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